

SECTION 5-05, CEMENT CONCRETE PAVEMENT
May 28, 1996

5-05.3(1) Proportioning Materials

In the "Concrete Mixes for Pavements" table in Section 5-05.3(1), all references to Portland Cement Type II are revised to read Type I or II.

The following paragraph is inserted after the "Concrete Mixes for Pavements" table:

Paving mix produced from dedicated plants shall use cement from a single mill source for the duration of a paving season.

Item a. of the sixth paragraph is revised to read:

The resulting coarse aggregate meets all requirements of Section 9-03.1(3)C, Grading No. 2.

The following paragraph is inserted after the sixth paragraph.

Fine aggregate shall conform to Section 9-03.1(2), Class 1.

The first sentence of the seventh paragraph is revised to read:

When no provision is made in the Contract for payment for alternate design ages, payment for additional costs to the Contractor for the alternate design ages ordered by the Engineer will be based on invoice differential for Type III or the additional Type I or II cement used.

5-05.3(1)A Alternate Concrete Mix Design For Paving

The first two sentences of the first paragraph under No. 1, Materials are replaced by the following:

Materials shall conform to Section 5-05.2. Fine aggregate shall conform to Section 9-03.1(2), Class 1. Coarse aggregate shall conform to Section 9-03.1(4) and shall be either grading No. 467 of Section 9-03.1(4)C or grading No. 2 of Section 9-03.1(3)C. Fly ash, if used, shall conform to Section 9-23.9 and shall be limited to Class F with a maximum CaO content of 15 percent by weight. The fly ash shall be limited to 20 percent by weight, of the total cementitious material. As an alternative to the use of fly ash and cement as separate components, a blended hydraulic cement may be used. Blended hydraulic cement shall conform to ASTM C595 Type IP(MS).

The first sentence of the first paragraph under No. 2, Submittals is revised to read:

The Contractor's submittal for approval shall include the mix proportions per cubic yard and the proposed sources for all ingredients, including the power plant that generated the fly ash.

The second sentence under No. 3, Mix Design Modifications, is revised to read:

A plus or minus 100 pound variation in both the coarse and fine aggregate target weights will be allowed from the approved contractor provided mix design weights as a modification without resubmittal.

1 **5-05.3(8)C Construction Joints**

2 The following paragraph is inserted after the first paragraph:

3
4 Transverse construction joints shall be constructed between cement concrete
5 pavement and reinforced concrete bridge approach slabs.
6

7 **5-05.3(10) Tie Bars and Dowel Bars**

8 The first paragraph is revised to read:

9
10 Epoxy-coated steel tie bars shall be placed at all longitudinal contraction and
11 construction joints in accordance with the requirements shown in the Standard
12 Plan. In addition, tie bars shall be installed when concrete shoulders are placed
13 as a separate operation or when widening existing pavement.
14

15 The third paragraph is supplemented with the following:

16
17 When required by the contract, epoxy-coated dowel bars shall be placed at each
18 transverse contraction joint in accordance with the Plans.
19

20 **5-05.3(12) Surface Smoothness**

21 The fourth, fifth and sixth paragraphs are revised to read:

22
23 All areas representing high points having deviations in excess of 0.3 inch, as
24 determined by procedures described in WSDOT Test Method 807, shall be
25 reduced by abrasive methods until such deviations do not exceed 0.1 inch as
26 determined by reruns of the profilograph. High areas of individual profiles shall be
27 reduced by abrasive means so that the profile index will not exceed 0.7 inch in
28 any 0.1 mile section. All high areas in excess of 0.1 inch shall be reduced to 0.0
29 inch prior to reducing any high points of 0.1 inch or less.
30

31 When any of the daily profile indexes exceed 7.0 inches per mile, final acceptance
32 of the pavement for smoothness parallel to the centerline will be based on profile
33 indexes as measured with the profilograph, operated by the Contractor under the
34 supervision of the Engineer, along a line parallel to the edge of pavement and
35 each longitudinal joint and will not be averaged for acceptance purposes. The
36 final acceptance profile indexes will be measured after all corrective work is
37 complete and will demonstrate that all 0.1 mile sections on the project are within
38 the 0.7 inch specification.
39

40 When cement concrete pavement abuts bridges, the finished pavement parallel to
41 centerline within 15 feet of the abutting joint shall be uniform to a degree that no
42 variations greater than 1/8 inch are present when tested within a 10-foot
43 straightedge.
44

45 The seventh paragraph is deleted.
46

47 **5-05.3(15) Concrete Pavement Construction in Adjacent Lanes**

48 The following is added after the first sentence in the first paragraph:

49
50 Longitudinal contraction joints shall be used between adjacent lanes that are
51 paved concurrently, and construction joints shall be used when lanes are paved
52 separately. Tie bars shall be installed during initial lane construction..
53

1 **5-05.3(19) Reinforced Concrete Bridge Approach Slabs**

2 The fifth paragraph is revised to read:

3
4 Reinforced concrete bridge approach slab anchors shall be installed as detailed in
5 the Plans. The anchor rods shall conform to ASTM A 307. The steel plates shall
6 conform to AASHTO M 183. The anchors shall be installed parallel both to profile
7 grade and center line of roadway. The Contractor shall secure the anchors to
8 ensure that they will not be misaligned during concrete placement. For Method A
9 anchor installations, the grout or adhesive used to install the anchors shall have a
10 minimum compressive strength of 4000 psi at three days and be capable of
11 developing the ultimate strength of the anchor rod. Compressive strength shall be
12 determined in accordance with AASHTO T 106.

13
14 **5-05.3(20) Unfinished Cement Concrete Pavement**

15 This section is deleted in its entirety.

16
17 **5-05.4 Measurement**

18 The first paragraph is revised to read:

19
20 Cement concrete pavement will be measured by the cubic yard for furnishing and
21 delivering concrete, and by the square yard for the completed pavement. Cubic
22 yard measurement will be based on batch plant weights. The batch plants shall
23 be equipped with an acceptable recording device capable of producing accurate
24 record of the quantity of individual materials incorporated into each batch of
25 concrete. A copy of this record shall be furnished the Engineer daily.
26 Measurement of concrete quantities will be based on this record, corrected daily
27 for yield and waste. The width for square yard measurement will be the width of
28 the pavement shown on the typical cross-section on the Plans, additional
29 widening where called for, or as otherwise specified in writing by the Engineer.
30 The length will be measured along the center line of each roadway or ramp.

31
32 This section is supplemented with the following:

33
34 The area for calculation of ride smoothness compliance adjustment is the area of
35 pavement, in square yards, represented by profilogram.

36
37 **5-05.5 Payment**

38 Item Nos. 1 and 2 are revised to read:

- 39
40 1. "Furnishing ____ Day Conc. for Cement Conc. Pavement", per cubic yard.
41 2. "Cement Conc. Pavement", per square yard.

42
43 This section is supplemented with the following:

44
45 10. "Ride Smoothness Compliance Adjustment", by calculation.
46 Payment for "Ride Smoothness Compliance Adjustment" will be calculated by
47 multiplying the unit contract price for cement concrete pavement, times the area
48 for adjustment, times the percent of adjustment determined from the schedule
49 below.

- 50
51 1. Adjustment will be based on the initial profile index before corrective
52 work.
53

1 2. "Ride Smoothness Compliance Adjustment" will be calculated for each
2 0.1 mile section represented by profilogram using the following schedule:
3

4	PROFILE INDEX	RIDE SMOOTHNESS
5		COMPLIANCE ADJUSTMENT
6	(inches per mile)	(percent adjustment)
7	1.0 or less	+4
8	over 1.0 to 2.0	+3
9	over 2.0 to 3.0	+2
10	over 3.0 to 4.0	+1
11	over 4.0 to 7.0	0
12	over 7.0	-2*

13
14 *also requires correction to 7.0 inches per mile
15

16 The last paragraph is revised to read:
17

18 All costs for providing, placing, and compacting the crushed surfacing top course
19 and furnishing and installing the compression seal shall be included in the unit
20 contract price per cubic yard for "Conc. Class 4000 for Bridge Approach Slab".